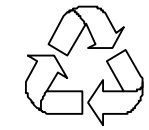
M11E System

User's Guide



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IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions carefully. Save these instructions for future reference.

2. Follow all warnings and instructions marked on the product.

3. Do not use this product near water.

4. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.

5. Slots and openings in the cabinet and the back or bottom are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.

6. This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.

7. This product is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.

8. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.

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9. If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet does not exceed 15 amperes.

10. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

11. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Refer all servicing to qualified service personnel.

12. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

    a. When the power cord or plug is damaged or frayed

    b. If liquid has been spilled into the product

    c. If the product has been exposed to rain or water

    d. If the product does not operate normally when the operating instructions are followed, adjust only those controls that are covered by the operating instructions, since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition

    e. If the product has been dropped or the cabinet has been damaged

    f. If the product exhibits a distinct change in performance, indicating a need for service

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13. Replace the battery with the same type as the product's battery we recommend. Use of another battery may present a risk of fire or explosion. Refer battery replacement to a qualified serviceman.

14. Warning! Battery may explode if not handled properly. Do not recharge, disassemble or dispose of in fire. Keep away from children and dispose of used batteries promptly.

15. Use only the proper type of power supply cord set (provided in your keyboard/manual accessories box) for this unit. It should be a detachable type: UL listed/CSA certified, type SVT/SJT, rated 6A 125V minimum, VDE approved or its equivalent. Maximum length is 15 feet (4.6 meters).

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CD-ROM Safety Warning

DANGER
INVISIBLE RADIATION WHEN OPEN.
AVOID EXPOSURE TO BEAM.

VORSICHT
UNSICHTBARE LASERSTRAHLUNG WENN GEÖFFNET.
NICHT IN DEN STRAHL SEHEN.

ATTENTION
RADIATION DU FAISCEAU LASER INVISIBLE. EN CAS D'OUVERTURE. EVITER TOUTE EXPOSITION AUX RAYONS.

VARO
AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ KATSO SÄTEESEEN.

VARNING!
OSYNLING LASERSTRÄLNING NÄR DENNA DEL ÄR ÖPPNAD.
BETRAKTA EJ STRÄLEN.

VARNING
OSYNLING LASERSTRÄLNING NÄR DENNA DEL ÄR ÖPPNAD.
STIRRA EJ IN I STRÄLEN.

ADVARSEL
LASERSTRÄLING VED ÄBNING. SE IKKE IND I STRÄLEN.

CLASS 1 LASER PRODUCT
APPAREIL A LASER DE CLASSE 1
LASER KLASSE 1
LOUKAN 1 LASERLAITE
PRODUIT LASER
CATEGORIE 1

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Caution on Lithium Batteries

CAUTION
Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

ADVARSEL!
Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Léver det brugte batteri tilbage til leverandøren.

ADVARSEL
Eksplosjonsfare ved feilaktig skifte av batteri. Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten. Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

VARNING
Explosionsfara vid felaktigt batteribyte. Anvãnd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera anvãnt batteri enligt fabrikantens instruktion.

VAROITUS
Päristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

VORSICHT!
Explosionsgefahr bei unsachgemäßen Austausch der Batterie Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

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FCC Class B Radio Frequency Interference Statement

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/television technician for help.

Notice 1:

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2:

Shielded interface cables, if any, must be used in order to comply with the emission limits.

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About this Manual

Purpose

This user's guide aims to give you the information you need to operate the system properly and tells you how to install internal components.

Manual Structure

This user's guide consists of two chapters.

Chapter 1 System Board

This chapter describes the system board and all its major components. It contains the system board layout, jumper settings, cache and memory configurations, and information on other internal devices.

Chapter 2 Setup Utility

This chapter gives information about the system BIOS and tells how to configure the system by changing the settings of the BIOS parameters.

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Conventions

The following conventions are used in this manual:

`Text entered by user`	Represents text input by the user.
ALT, ENTER, F8, etc.	Represent the actual keys that you have to press on the keyboard.
	NOTE Gives bits and pieces of additional information related to the current topic.
	CAUTION Gives precautionary measures to avoid possible hardware or software problems.
	IMPORTANT Reminds you to take specific actions relevant to the accomplishment of procedures.

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Chapter
1

System Board

1.1 Features

This high-performance system board supports the Intel Pentium II CPU running at 233 up to 350 and 400 MHz. Integrated with the Intel 440BX system controller, which consists of the PCI/AGP controller and the PCI/ISA IDE accelerator (PIIX4), the M11E combines the new generation of Pentium II power with unmatched graphics performance.

The PCI/AGP controller host bus interface supports a Pentium II processor with 66 or 100 MHz bus frequency. It also provides a 72-bit DRAM that supports synchronous DRAM (SDRAM) DIMMs. The PCI/AGP controller introduces a new technology, which is the Accelerated Graphics Port (AGP) interface. Supporting up to 133 MHz data transfer speed, the AGP interface boosts graphics performance.

The PIIX4 is a multifunction PCI device controller implementing system functions including PCI IDE, universal serial bus (USB) host/hub, and enhanced power management. It also supports Ultra DMA/33 synchronous DMA-compatible devices.

The system board utilizes both the ISA and the PCI local bus architecture. Two ISA, five PCI bus slots (including one PCI/ISA shared slot), and one AGP slot reside on the board to allow installation of either master or slave devices.

Three memory banks composed of 168-pin dual inline memory module (DIMM) sockets support a maximum system memory of 384 MB using 128-MB DIMMs. The sockets only supports SDRAM-type DIMM.

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It also supports the USB (Universal Serial Bus) connector, and other standard features such as two UART NS16C550 serial ports, one enhanced parallel port with an Enhanced Parallel Port (EPP)/Extended Capabilities Port (ECP) feature, a diskette drive interface, and two embedded hard disk interfaces. The board also includes a built-in 10/100 Mb/s Intel 82558 LAN chip that supports Wake-On-LAN (WOL) (only for models with LAN feature).

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1.2 Major Components

The system board has the following major components:

- Exclusive slot for Intel Pentium II processor
- Three DIMM sockets that accept 16-, 32-, 64- and 128-MB DIMMs
- Two ISA, four PCI (five PCI for boards without LAN), and one AGP expansion slots (including one PCI/ISA shared slot)
- 256-KB Flash ROM for system BIOS
- 10/100 Mb/s Intel 82558 LAN chip that supports Wake-On-LAN (WOL) (manufacturing option)
- Enhanced IDE hard disk and diskette drive interface
- PS2 power connector
- System controller chipset
- External ports:
  - USB connector
  - RJ-45 jack (manufacturing option)
  - Parallel port
  - PS/2-compatible keyboard port
  - PS/2-compatible mouse port
  - Serial port 1 and 2

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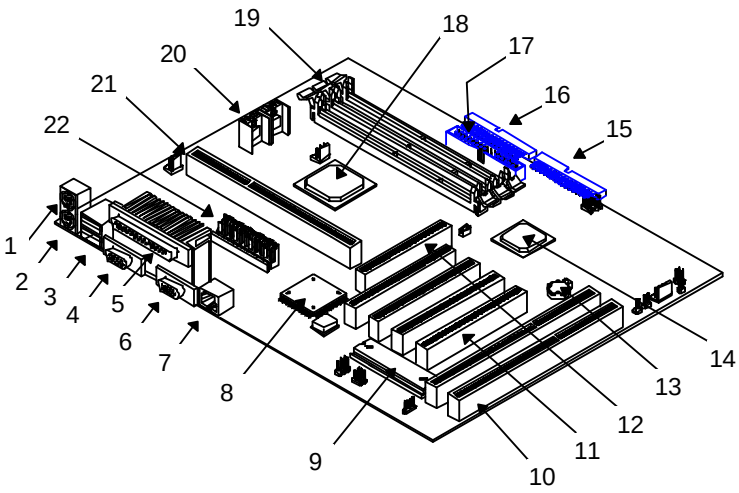
1.2.1 System Board Layout



1	*PS/2 mouse port*	*12*	*AGP slot*
2	*PS/2 keyboard port*	*13*	*Battery*
3	*USB connectors*	*14*	*Intel 82371EB*
4	*Serial port 2*	*15*	*IDE1 connector*
5	*Parallel port*	*16*	*IDE2 connector*
6	*Serial port 1*	*17*	*FDD connector*
7	*RJ-45 connector*	*18*	*Intel 440BX*
8	*Intel 82C558 Ethernet controller*	*19*	*DIMM sockets*
9	*BIOS*	*20*	*Voltage regulators*
10	*ISA slots*	*21*	*CPU slot*
11	*PCI slots*	*22*	*Power connector*

Figure 1-1 System Board Layout with Network Connector

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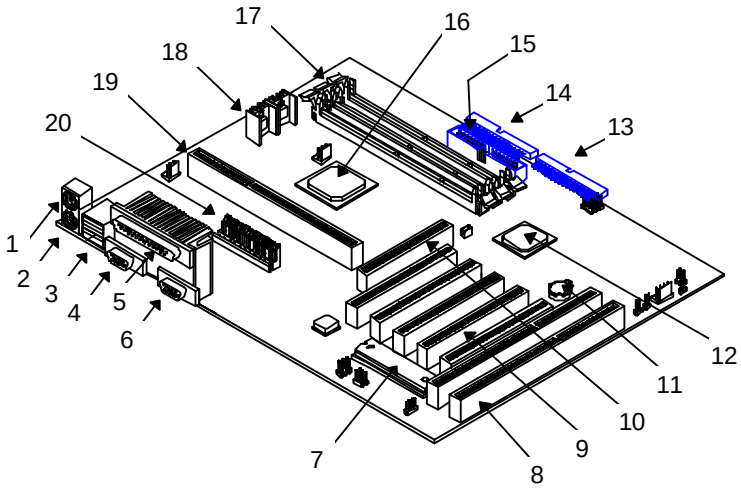

1	*PS/2 mouse port*	*11*	*Battery*
2	*PS/2 keyboard port*	*12*	*Intel 82371EB*
3	*USB connectors*	*13*	*IDE1 connector*
4	*Serial port 2*	*14*	*IDE2 connector*
5	*Parallel port*	*15*	*FDD connector*
6	*Serial port 1*	*16*	*Intel 440BX*
7	*BIOS*	*17*	*DIMM sockets*
8	*ISA slots*	*18*	*Voltage regulators*
9	*PCI slots*	*19*	*CPU slot*
10	*AGP slot*	*20*	*Power connector*

Figure 1-2 System Board Layout without Network Connector

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1.3 Jumpers and Connectors

1.3.1 Jumper and Connector Locations

Figure 1-3 and 1-4 shows the jumper locations on the system board.

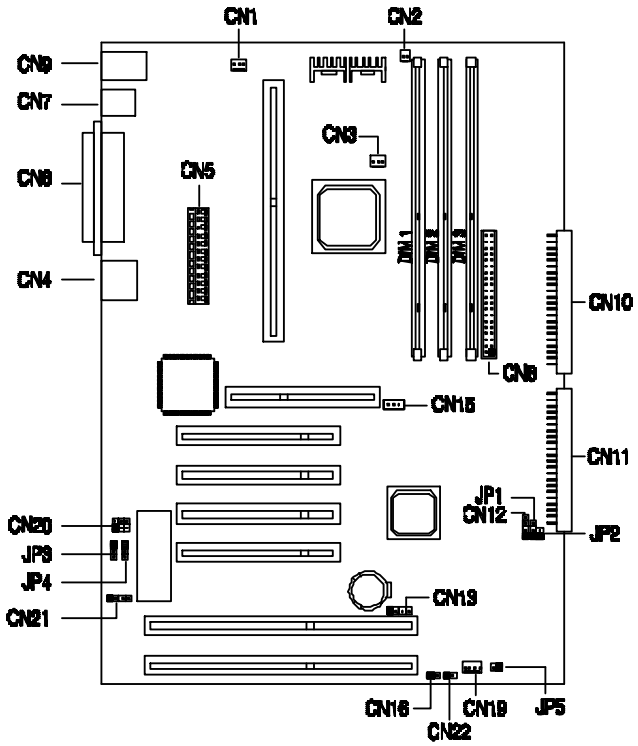

Figure 1-3 Jumper and Connector Locations with a Network Connector

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The blackened pin of a jumper or connector represents pin 1.

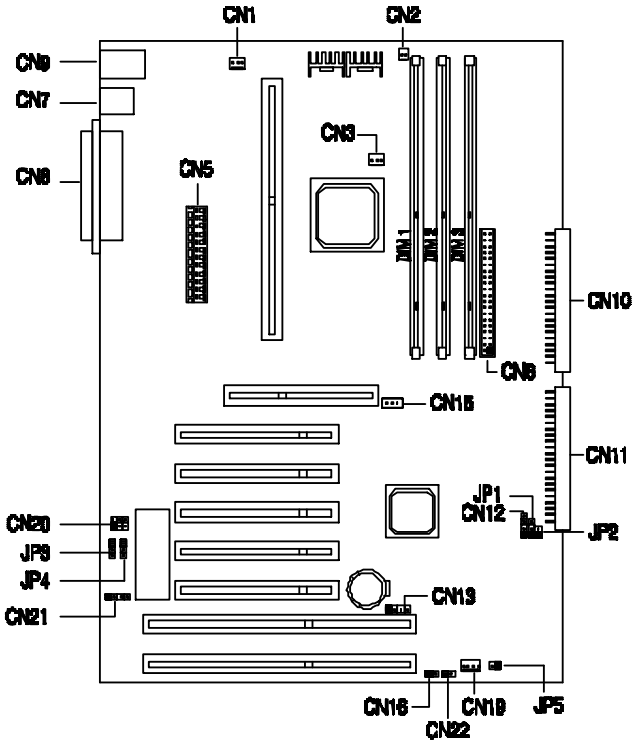

Figure 1-4 Jumper and Connector Locations without a Network Connector

The blackened pin of a jumper or connector represents pin 1.

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1.3.2 Jumper Settings

Table 1-1 Jumper Settings

Jumper	Setting	Function
Password Security JP3	 1-2 2-3*	 Check password Bypass password
BIOS JP4	 1-2* 2-3	 Acer OEM

1.3.3 Connector Functions

Table 1-2 lists the different connectors on the system board and their respective functions.

Table 1-2 Connector Functions

Connector	Function
CN1	Suspend 5V
CN2	CPU thermal sensor connector
CN3	CPU fan connector
CN4	LAN Jack (RJ45) (optional)
CN5	Power connector
CN6	Floppy disk connector
CN7	USB connectors
CN8	COM1 (lower right), COM2 (lower left), and Parallel port (above)
CN9	Upper: PS/2 mouse connector Lower: PS/2 keyboard connector
CN10	Enhanced IDE 2 connector
CN11	Enhanced IDE 1 connector

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Table 1-2 Connector Functions

Connector	Function
CN12	Hard disk LED connector
CN13	SCSI disk LED connector (for M11E Combo Card)
CN15	Wake up On LAN connector
CN16	Power switch
CN19	Housing fan connector
CN20	Audio line-in connector (reserved*)
CN21	Modem Ring-In wake up connector
CN22	Turbo LED connector
JP1	Power LED connector
JP2	System reset connector
JP5	Housing intrusion switch connector

* Reserved items are items that are supported by the system board but not available in the current version.

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1.4 ESD Precautions

Always observe the following ESD (electrostatic discharge) precautions before installing any system component:

1. Do not remove any system component from its packaging unless you are ready to install it.
2. Wear a wrist grounding strap before handling electronic components. Wrist grounding straps are available at most electronic component stores.

DO NOT attempt the procedures in the following sections unless you are confident of your capability to perform them. Otherwise, ask a service technician for assistance.

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1.5 Installing the Pentium II processor

The following section will briefly explain and illustrate how to install the Pentium II processor.

You have to attached the fan sink before installing the Pentium II processor into the system board.

1.5.1 Attaching the Processor Fan Sink

There are currently two kinds of fan sink. Both of them can be easily attach to the Pentium II processor module. The new fan sink includes a new metal retention bracket to hold the Pentium II processor module more securely.

The Pentium II processor module comes with holes on one side to hold the clips of the fan sink. The upper set of holes (near the latches) on the processor are wider and should match the wider ends of the clips on the fan sink. The lower set of holes are smaller and should match the narrow ends of the fan sink clips.

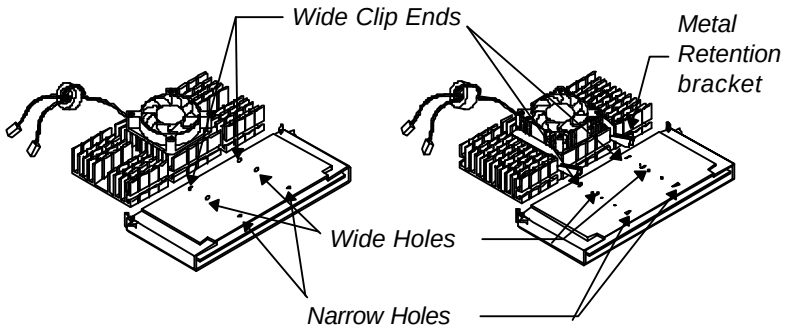

Figure 1-5 Matching the Fan Sink Clips with the Holes on the Processor

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Follow these steps when installing the fan sink and fan into the Pentium II processor module:

1. Remove the thermal tape protector at the back of the fan sink.

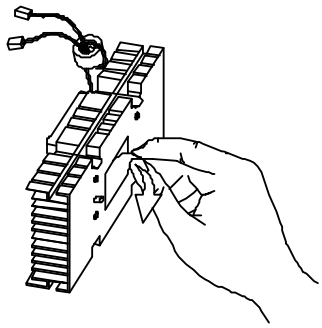

Figure 1-6 Removing tape protector from Fan SInk

2. Insert the wide clip ends into the wide holes on the processor and the narrow clip ends into the narrow holes.

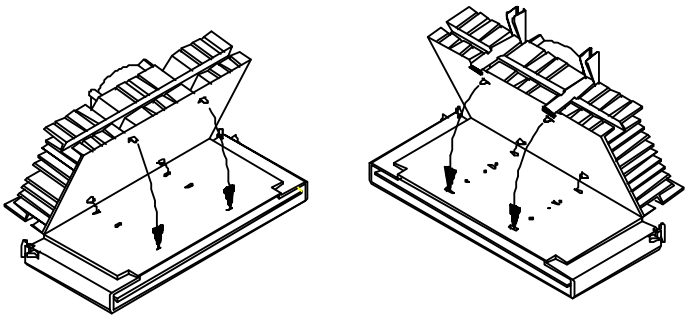

Figure 1-7 Inserting the Clip Ends into the Processor Holes

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3a. Use a screwdriver to press and lock in the wide end of a clip first. Then without lifting the screwdriver, point it downward to press and lock the narrow end of the clip.

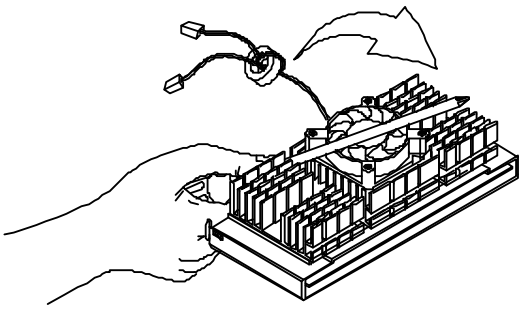

Figure 1-8 Locking a Wide Clip End

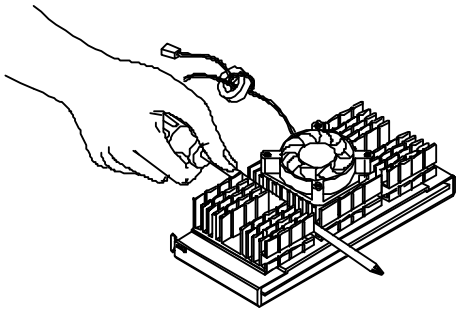

Figure 1-9 Locking a Narrow Clip End

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3b. Using your fingers, push down the metal bracket until it clicks into the CPU cartridge and then push the metal bracket's handle to lock the metal bracket into place.

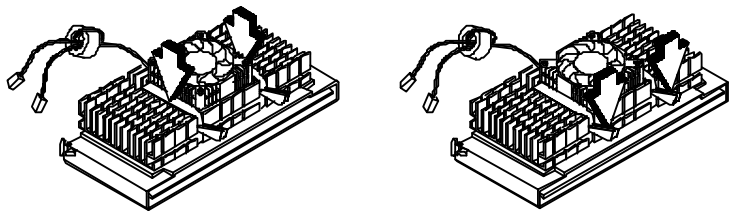

Figure 1-10 Locking the metal bracket

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1.5.2 Installing a Pentium II Processor

Follow these steps to install the Pentium II processor to the socket on the CPU board.

1a. Place the retention mechanism over the processor socket on the CPU board. Secure it with the screws that came with the package.

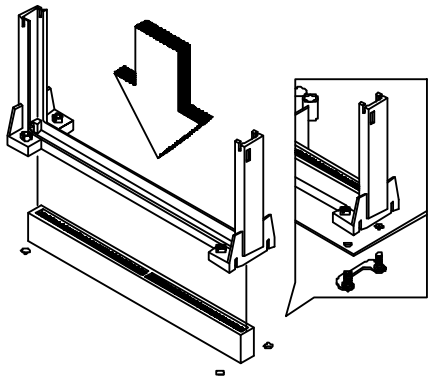

Figure 1-11 Installing the Pentium II Retention Mechanism

1b. Place the retention mechanism over the processor socket on the CPU board. Secure it with the plastic pegs that came with the package as shown below.

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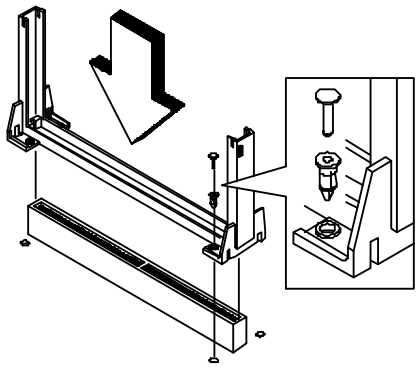

Figure 1-12 Installing the Pentium II Retention Mechanism

2. With the processor module golden fingers pointing downward, align the processor to the posts of the retention mechanism then lower it down. See Figure 1-8.

The golden fingers of the Pentium II module are slotted such that it only fits in one direction. Make sure that the module groove matches the one on the processor socket.

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3. Press down the processor module until the golden fingers completely fit into the socket.

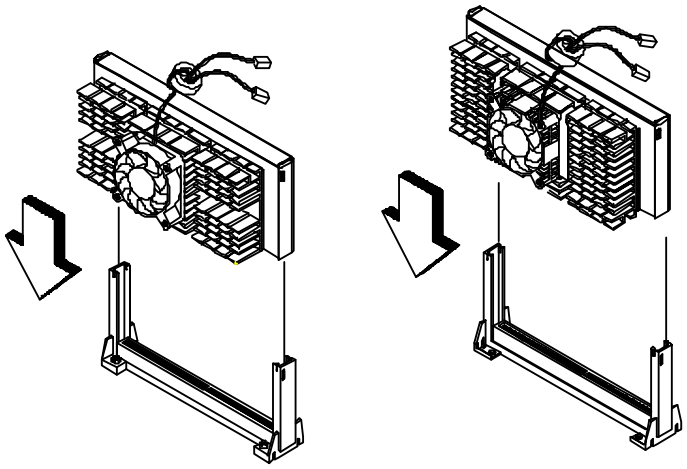

Figure 1-13 Installing a Pentium II Processor

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4. Press the latches on the sides to lock the processor module into place.

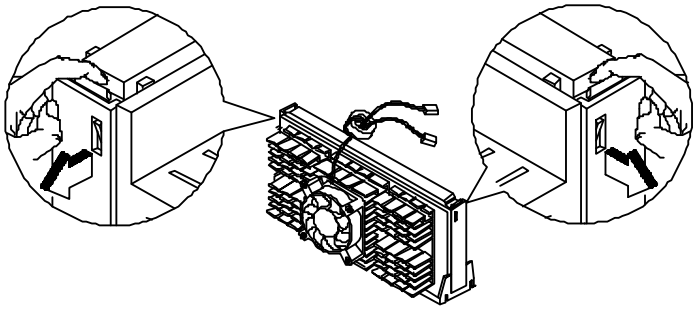

Figure 1-14 Securing the Pentium II Processor

1.5.3 Removing a Pentium II Processor

Follow these steps to remove the Pentium II CPU module from the slot.

1. Unlock the latches that secure the processor module.

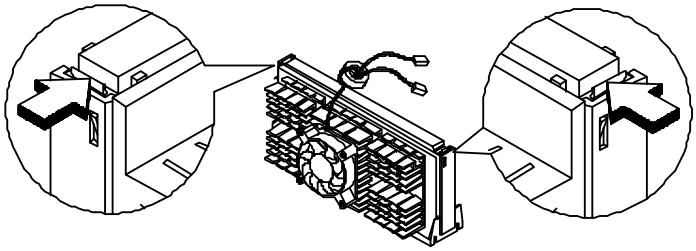

Figure 1-15 Unlocking the Module Latches

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2. Firmly hold the processor module and pull it out of the socket.

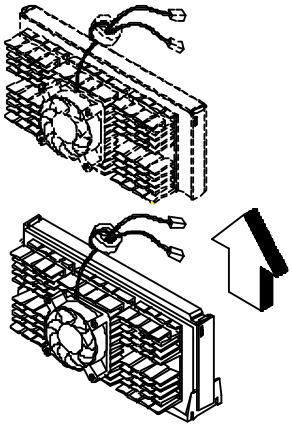

Figure 1-16 Removing the Pentium II Processor

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1.6 Memory Upgrade

The three 168-pin sockets onboard supports SDRAM-type DIMMs only. You may install 16-MB, 32-MB, 64-MB, or 128-MB DIMMs for a maximum 384-MB system memory.

The SDRAM DIMMs should work under 3.3 volts; 5-volt memory devices are not supported. Memory modules with a timing setting of 66 MHz are defined under unbuffered DIMM specifications, while 100 MHz modules are defined under Intel PC-100 SDRAM specifications.

Do not use both 66 MHz (unbuffered) and 100 MHz (registered) SDRAM together. This might cause your system to malfunction.

Each of the sockets represents one independent bank. This allows you to install DIMMs with different capacities to form a configuration.

1.6.1 Memory Configurations

Table 1-3 lists some system memory configurations. You may combine DIMMs with various capacities to form other combinations.

Table 1-3 Memory Configurations

Bank 0	Bank 1	Bank 2	Total Memory
16 MB			16 MB
16 MB	16 MB		32 MB
16 MB	16 MB	16 MB	48 MB
32 MB			32 MB
32 MB	32 MB		64 MB
32 MB	32 MB	32 MB	96 MB
64 MB			64 MB
64 MB	64 MB		128 MB
64 MB	64 MB	64 MB	192 MB

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Table 1-3 Memory Configurations

Bank 0	Bank 1	Bank 2	Total Memory
128 MB			128 MB
128 MB	128 MB		256 MB
128 MB	128 MB	128 MB	384 MB

1.6.2 Installing a DIMM

To install a DIMM, align it with the socket and press it down until the holding clips secure the DIMM in place.

The DIMM socket is slotted to ensure proper installation. If you slip in a DIMM but it does not completely fit, you may have inserted it the wrong way. Reverse the orientation of the DIMM.

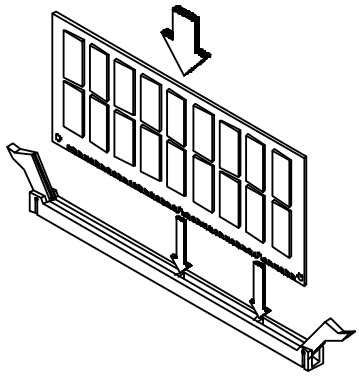

Figure 1-17 Installing a DIMM

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1.6.3 Removing a DIMM

To remove a DIMM, press the holding clips on both sides of the socket outward to release the DIMM.

Place your forefingers on the top of the DIMM before you press the holding clips to gently disengage the DIMM from the socket.

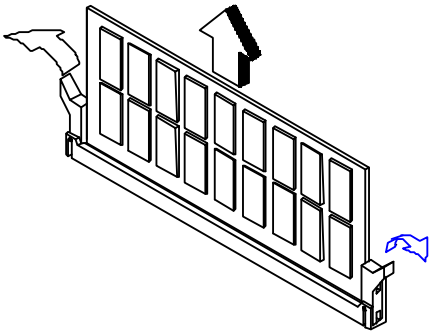

Figure 1-18 Removing a DIMM

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1.6.4 Reconfiguring the System

Reconfigure the system after installing or removing DIMMs.

Follow these steps to reconfigure the system:

1. Reboot the system. A memory error message appears, indicating that the total memory does not match the value stored in CMOS.
2. Press CTRL + ALT + ESC.
3. Press ESC twice to exit Setup and reboot the system. The system boots with the new memory configuration.

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1.7 Installing Expansion Cards

1.7.1 Installing PCI Cards

To install PCI cards:

1. Locate the PCI slots on the system board.
2. Remove the bracket on the housing opposite an empty PCI slot.
3. Insert a PCI card into the slot. Make sure that the card is properly seated.
4. Secure the card to the housing with a screw.

When you turn on the system, BIOS automatically detects and assigns resources to the PCI devices.

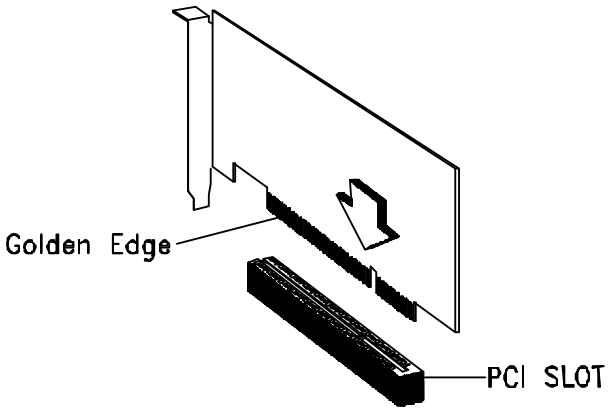

Figure 1-19 Installing a PCI Card

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1.7.2 Installing ISA Cards

Both PnP and non-PnP ISA cards require specific IRQs. When installing ISA cards, make sure that the IRQs required by these cards are not previously assigned to PCI devices to avoid resource conflicts.

Follow these steps when installing ISA cards:

1. Remove all PnP cards installed in the system, if any.
2. Install non-PnP ISA cards.
3. Turn on the system.
4. Use Windows 95 or ICU to manually assign the appropriate IRQs to the cards. This ensures that BIOS will not use the resources assigned to the non-PnP ISA cards.

BIOS detects and configures only PnP cards.

5. Turn off the system.
6. Locate the expansion slots and install the PnP ISA and PCI cards.
7. Turn on the system. This time PnP BIOS automatically configures the PnP ISA and PCI cards with the available resources.

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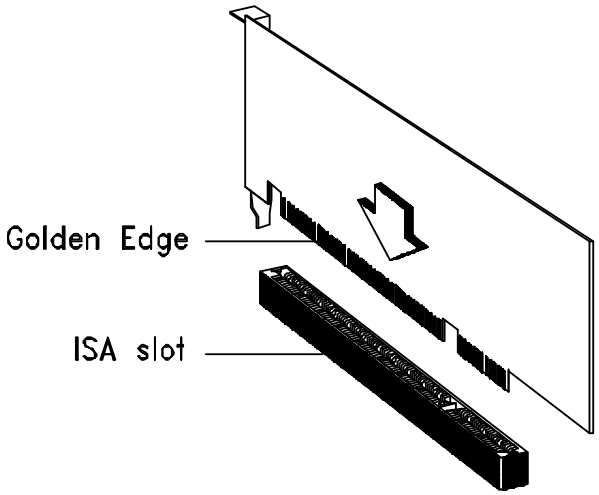

Figure 1-20 Installing an ISA Card

1.7.3 Installing an AGP Card

When installing an AGP card, make sure that the IRQ required by this card is not already assigned to a PCI or ISA device to avoid resource conflicts.

Follow these steps when installing an AGP card:

1. Locate the AGP slot on the mainboard.
2. Insert an AGP card into the slot. Make sure that the card is properly seated.

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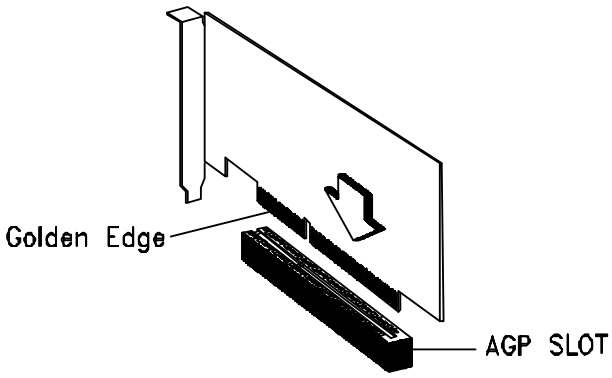

Figure 1-21 Installing an AGP Card

When you turn on the system, BIOS automatically detects and assigns resources to the AGP device.

BIOS detects and configures only PnP cards.

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1.8 Error Messages

Do not continue using the computer if you receive an error message of any type. Note the message and take corrective action. This section describes the types of error messages and lists their corresponding corrective measures.

There are two general types of error messages:

- Software
- System

1.8.1 Software Error Messages

Software error messages are returned by your operating system or application. These messages typically occur after you boot the operating system or when you run your application. If you receive this type of message, consult your application or operating system manual for help.

1.8.2 System Error Messages

A system error message indicates a problem with the computer itself. A message of this type normally appears during the power-on self-test, before the operating system prompt appears. Table 1-4 lists the system error messages.

Table 1-4 System Error Messages

Message	Action
CMOS Battery Error	Replace the battery or contact your dealer.
CMOS Checksum Error	Run Setup.
CPU BIOS Update Code Mismatch	Contact your dealer.

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Table 1-4 System Error Messages

Message	Action
Diskette Drive Controller Error or Not Installed	Check and connect the control cable to the diskette controller.
Diskette Drive Error	Check the CMOS settings in Setup and the diskette drive cable connections.
Diskette Drive A Type Mismatch	Run Setup and select the proper drive type.
Diskette Drive B Type Mismatch	Run Setup and select the proper drive type.
Equipment Configuration Error	Modify DRAM configuration to agree with one of the options in Table 1-3.
Hard Disk Controller Error	Run Setup.
Hard Disk 0 Error	Check all cable connections. Replace hard disk.
Hard Disk 1 Error	Check all cable connections. Replace hard disk.
Hard Disk 0 Extended Type Error	Run Setup.
Hard Disk 1 Extended Type Error	Run Setup.
I/O Parity Error	Contact your dealer.
Keyboard Error or No Keyboard Connected	Check and connect the keyboard to the system unit.
Keyboard Interface Error	Replace the keyboard or contact your dealer.

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Table 1-4 System Error Messages

Message	Action
Memory Error at: MMMM:SSSS:OOO (W:XXXX, R:YYYY) where: M: MB, S: Segment, O: Offset, X/Y: write/read pattern	Check DIMMs on the system board. Contact your dealer.
Memory Size Mismatch CPU Clock Mismatch	Check the memory size based on the system specifications. Check the internal cable connections. If you are sure that connections and values are correct, ignore the message. If the message reappears, ask for technical assistance.
Onboard Serial Port 1 Conflict	Run Setup and disable the port.
Onboard Serial Port 2 Conflict	Run Setup and disable the port.
Onboard Parallel Port Conflict	Run Setup and disable the port.
Pointing Device Error	Check and connect pointing device.
Pointing Device Interface Error	Replace the pointing device or contact your dealer.
Press F1 key to continue or Ctrl-Alt-Esc for Setup	Press F1 or CTRL + ALT + ESC to enter Setup.
Real Time Clock Error	Run Setup and set the time and date.
Press Esc to turn off NMI, any key to reboot	Press ESC to disregard the NMI error. Press any other key to reboot the system.

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1.8.3 Correcting Error Conditions

As a general rule, if an error message says "Press F1 to continue," it is caused by a configuration problem, which can be easily corrected. An equipment malfunction is more likely to cause a fatal error, i.e., an error that causes complete system failure.

Here are some corrective measures for error conditions:

1. Run Setup. You must know the correct configuration values for your system before you enter Setup, which is why you should write them down when the system is correctly configured. An incorrect configuration is a major cause of power-on error messages, especially for a new system.

2. Remove the system cover, following the directions in the housing installation manual. Check that the jumpers on the system board and any expansion boards are set correctly.

3. If you cannot access a new disk, it may be because your disk is not properly formatted. Format the disk first using the FDISK and FORMAT commands.

4. Check that all connectors and boards are secure.

If you go through these steps and still receive an error message, the cause may be an equipment malfunction.

If you are sure that your configuration values are correct and your battery is in good condition, the problem may lie in a damaged or defective chip.

In either case, contact an authorized service center for assistance.

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Chapter
2

Setup Utility

Most systems are already configured by the manufacturer or the dealer. There is no need to run Setup when starting the computer unless you get a Run Setup message.

The Setup program loads configuration values into the battery-backed nonvolatile memory called CMOS RAM. This memory area is not part of the system RAM.

If you repeatedly receive Run Setup messages, the battery may be bad. In this case, the system cannot retain configuration values in CMOS. Ask a qualified technician for assistance.

Before you run Setup, make sure that you have saved all open files. The system reboots immediately after you exit Setup.

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2.1 Entering Setup

To enter Setup, simultaneously press the key combination CTRL+ALT+ESC.

You must press CTRL+ALT+ESC while the system is booting. This key combination does not work during any other time.

The Setup Utility Main Menu appears:

Setup Utility

- System Information
- Product Information
- Disk Drives
- Onboard Peripherals
- Power Management
- Boot Options
- Date and Time
- System Security

- Load Default Settings
- Abort Settings Change

The system supports two BIOS Utility levels: Basic and Advanced. The above screen is the BIOS Utility Basic Level screen. This allows you to view and change only the basic configuration of your system.

If you are an advanced user, you may want to check the detailed configuration of your system. Detailed system configurations are contained in the Advanced Level. To view the Advanced Level, press F8. The screen shows the BIOS Utility Advanced Level main menu.

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Setup Utility

- System Information
- Product Information
- Disk Drives
- Onboard Peripherals
- Power Management
- Boot Options
- Date and Time
- System Security
- Advanced Options*

- Load Default Settings
- Abort Settings Change

The asterisk (*) mark indicates that the parameter appears only when you are in the Advanced Level.
The parameters on the screens show default values. These values may not be the same as those in your system.
The grayed items on the screens have fixed settings and are not user-configurable.

Use the arrow keys ↑, ↓, ←, and → to move around the Setup Utility screen.

Use PGDN to move to the next page or PGUP to return to the previous page if the setup screen has more than one page available.

Press ESC to return to the Main menu.

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2.2 System Information

The following screen appears if you select System Information from the Main menu:

```
                    System Information

Processor ......................Pentium II
Processor Speed ................300 MHz
Internal Cache Size ............32 KB, Enabled
External Cache Size ............512 KB, Enabled
Floppy Drive A .................1.44 MB, 3.5-inch
Floppy Drive B .................None
IDE Primary Channel Master .....Hard Disk, xxx MB
IDE Primary Channel Slave ......None
IDE Secondary Channel Master ...None
IDE Secondary  Channel Slave ...None
Total Memory ...................xxx MB
  1st Bank .....................SDRAM, xxx MB
  2nd Bank .....................None
  3rd Bank  ....................None
```

The System Information menu shows the current basic configuration of your system.

The next screen shows page 2 of the System Information menu.

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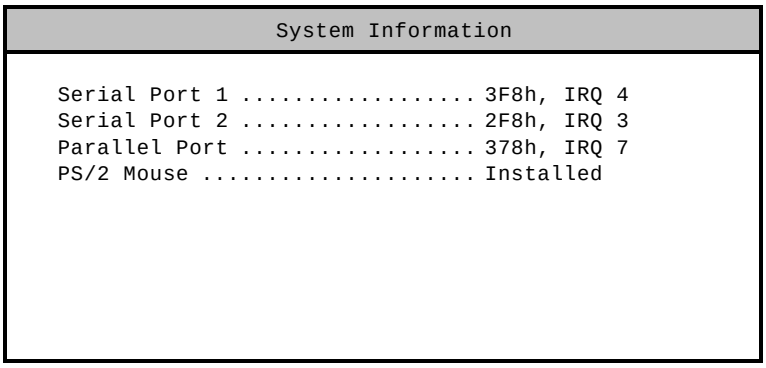

The sections below explain the parameters.

2.2.1 Processor

The Processor parameter specifies the type of processor currently installed in your system. The system supports Intel Pentium II processors.

2.2.2 Processor Speed

The Processor Speed parameter specifies the speed of the processor currently installed in your system. The system can support Pentium II processors running at 233, 266, 300, 333, 350, and 400 MHz and Celeron processors running at 266 MHz.

2.2.3 Internal Cache Size

This parameter specifies the first-level or the internal memory (i.e., the memory integrated into the CPU) size, and whether it is enabled or disabled.

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2.2.4 External Cache

This parameter specifies the second-level cache memory size currently supported by the system. The available cache sizes are 256 KB or 512 KB (depending on the CPU installed). For information on how to configure the system memory, see section 2.9.1

2.2.5 Floppy Drive A

This parameter specifies the system's current diskette drive A settings. For information on how to configure the floppy drives, see section 2.4.1.

2.2.6 Floppy Drive B

This parameter specifies the system's current diskette drive B settings. For information on how to configure the floppy drives, see section 2.4.1.

2.2.7 IDE Primary Channel Master

This parameter specifies the current configuration of the IDE device connected to the master port of the primary IDE channel. For information on how to configure the IDE drives, see section 2.4.3.

2.2.8 IDE Primary Channel Slave

This parameter specifies the current configuration of the IDE device connected to the slave port of the primary IDE channel. For information on how to configure the IDE drives, see section 2.4.3.

2.2.9 IDE Secondary Channel Master

This parameter specifies the current configuration of the IDE device connected to the master port of the secondary IDE channel. For information on how to configure the IDE drives, see section 2.4.3.

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2.2.10 IDE Secondary Channel Slave

This parameter specifies the current configuration of the IDE device connected to the slave port of the secondary IDE channel. For information on how to configure the IDE drives, see section 2.4.3.

2.2.11 Total Memory

This parameter specifies the total amount of onboard memory. The memory size is automatically detected by BIOS during the POST. If you install additional memory, the system automatically adjusts this parameter to display the new memory size.

1st Bank/2nd Bank/3rd Bank

The 1st Bank, 2nd Bank, and 3rd Bank parameters indicate the type and size of DRAM installed in DIMM sockets 1, 2, and 3 respectively. The None setting indicates that there is no DRAM installed. For the location of the DIMM sockets, refer to Figure 1-1.

2.2.12 Serial Port 1

This parameter shows the serial port 1 address and IRQ setting.

2.2.13 Serial Port 2

This parameter shows the serial port 2 address and IRQ setting.

2.2.14 Parallel Port

This parameter shows the parallel port address and IRQ setting.

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2.2.15 PS/2 Mouse

The BIOS utility automatically detects if there is a pointing device connected to your system. If there is, this parameter displays the `Installed` setting. Otherwise, this is set to `None`.

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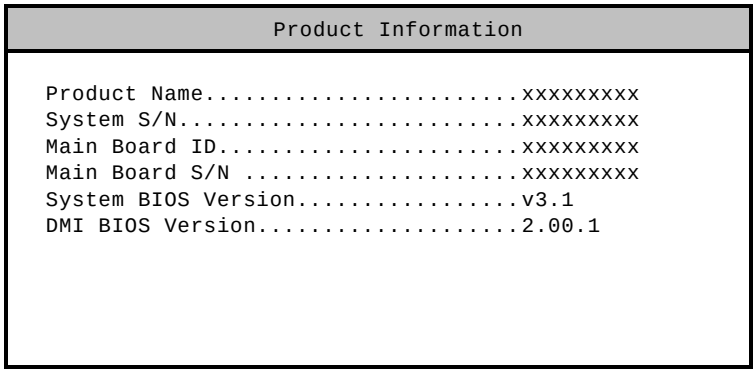
2.3 Product Information

The Product Information contains the general data about the system, such as the product name, serial number, BIOS version, etc. This information is necessary for troubleshooting (may be required when asking for technical support).

The following figure shows how the Product Information screen appears:



2.3.1 Product Name

This parameter specifies the official name of the system.

2.3.2 System S/N

This parameter specifies the system's serial number.

2.3.3 Main Board ID

This parameter specifies the system board's identification number.

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2.3.4 Main Board S/N

This parameter specifies the system board's serial number.

2.3.5 System BIOS Version

This parameter specifies the version of the BIOS utility.

2.3.6 DMI BIOS Version

This parameter specifies the version of the DMI (Desktop Management Interface) BIOS version. DMI enables software to collect information about a computer environment.

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2.4 Disk Drives

Select Disk Drives to input configuration values for disk drives.

The following screen shows the Disk Drives menu:

```
                        Disk Drives

Diskette Drive A ..................[xx-MB, xx-inch]
Diskette Drive B ..................[     None     ]

LS-120 Drive as ...................[ Normal ]

• IDE Primary Channel Master
• IDE Primary Channel Slave
• IDE Secondary Channel Master
• IDE Secondary Channel Slave
```

2.4.1 Floppy Drives

To enter the configuration value for the first floppy drive (drive A), highlight the Floppy Drive A parameter. Press → or ← key to view the options and select the appropriate value.

Possible settings for the Floppy Drive parameters are:

- [None]
- [360 KB, 5.25-inch]
- [1.2 MB, 5.25-inch]
- [720 KB, 3.5-inch]
- [1.44 MB, 3.5-inch]
- [2.88 MB, 3.5-inch]

Follow the same procedure to configure floppy drive B. Choose None if you do not have a second floppy drive.

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2.4.2 LS-120 Drive Compatible As

This parameter allows you not only to enable the LS-120 device installed in your system, but also to specify the function of the device. The setting affects how BIOS will detect the device.

Possible settings are:

- `Normal` In this setting, BIOS does not support the LS-120 drive. The drive needs the LS-120 device driver to operate.
- `Drive A` BIOS recognizes the LS-120 drive as drive A. If a standard diskette drive A exists, BIOS automatically identifies it as drive B. If a standard diskette drive B exists, it automatically becomes inaccessible.

  If two LS-120 drives exist, BIOS recognizes them as drive A and drive B, respectively.
- `Drive B` BIOS recognizes the LS-120 drive as drive B. If a standard diskette drive B exists, it becomes inaccessible.
- `Hard Disk` BIOS recognizes the LS-120 drive as a hard disk. In this setting, format the LS-120 drive as any other hard disk and assign it a drive letter C, D, E, and so on. See the documentation that came with the LS-120 drive for more information.

2.4.3 IDE Drives

To configure the IDE drives connected to your system, select the parameter that represents the channel and port where the desired hard disk to configure is connected. The options are:

IDE Primary Channel Master

This parameter lets you configure the hard disk drive connected to the master port of IDE channel 1.

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IDE Primary Channel Slave

This parameter lets you configure the hard disk drive connected to the slave port of IDE channel 1.

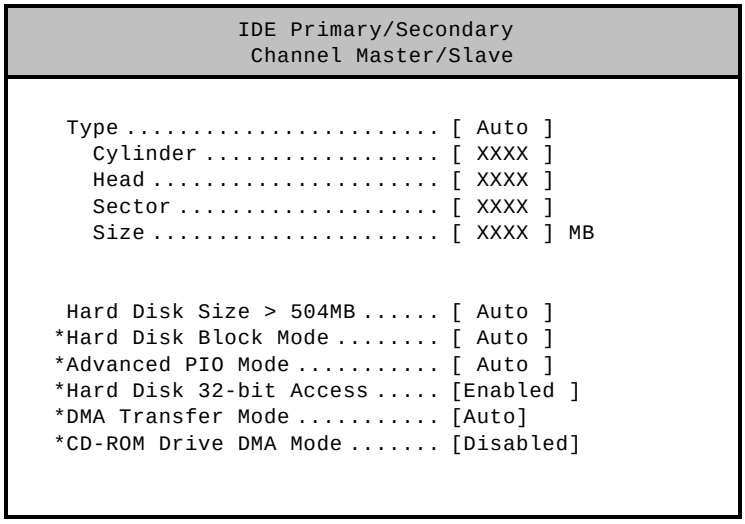
IDE Secondary Channel Master

This parameter lets you configure the hard disk drive connected to the master port of IDE channel 2.

IDE Secondary Channel Slave

This parameter lets you configure the hard disk drive connected to the slave port of IDE channel 2.

The following screen appears if you select any of the IDE Drive parameters:


IDE Primary/Secondary
Channel Master/Slave
Type ..... [Auto]
Cylinder ..... [XXXX]
Head ..... [XXXX]
Sector ..... [XXXX]
Size ..... [XXXX] MB
Hard Disk Size > 504MB ..... [Auto]
*Hard Disk Block Mode ..... [Auto]
*Advanced PIO Mode ..... [Auto]
*Hard Disk 32-bit Access ..... [Enabled]
*DMA Transfer Mode ..... [Auto]
*CD-ROM Drive DMA Mode ..... [Disabled]

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The above parameters marked with '' will only appear if you access the advanced configuration level in the Main Menu. Please refer to section 2.1 for more information.*

TYPE

This parameter lets you specify the type of hard disk installed in your system. If you want BIOS to automatically configure your hard disk, select Auto. If you know your hard disk type, you can enter the setting manually.

Setting this parameter also sets the Cylinder, Head, Sector, and Size parameters.

CYLINDERS

This parameter specifies the number of cylinders of your hard disk, and is automatically set depending on your Type parameter setting.

HEADS

This parameter specifies the number of heads of your hard disk, and is automatically set depending on your Type parameter setting.

SECTORS

This parameter specifies the number of sectors of your hard disk, and is automatically set depending on your Type parameter setting.

SIZE

This parameter specifies the size of your hard disk, in MB.

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Enhanced IDE Features

HARD DISK SIZE > 504 MB

When set to Auto, the BIOS utility automatically detects if the installed hard disk supports the function. If supported, it allows you to use a hard disk with a capacity of more than 504 MB. This is made possible through the Logical Block Address (LBA) mode translation. However, this enhanced IDE feature works only under DOS, Windows 3.x, Windows 95, and Windows NT 3.5 and above. Other operating systems require this parameter to be set to Disabled.

HARD DISK BLOCK MODE

This function enhances disk performance depending on the hard disk in use. If you set this parameter to Auto, the BIOS utility automatically detects if the installed hard disk drive supports the Block Mode function. If supported, it allows data transfer in blocks (multiple sectors) at a rate of 256 bytes per cycle. To disregard the feature, change the setting to Disabled.

ADVANCED PIO MODE

When set to Auto, the BIOS utility automatically detects if the installed hard disk supports the function. If supported, it allows for faster data recovery and read/write timing that reduces hard disk activity time. This results in better hard disk performance. To disregard the feature, change the setting to Disabled.

HARD DISK 32-BIT ACCESS

Enabling this parameter improves system performance by allowing the use of the 32-bit hard disk access. This enhanced IDE feature works only under DOS, Windows 3.x, Windows 95, and Novell NetWare. If your software or hard disk does not support this function, set this parameter to Disabled .

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DMA TRANSFER MODE

The Ultra DMA and Multi-DMA modes enhance hard disk performance by increasing the transfer rate. However, besides enabling these features in the BIOS Setup, both the Ultra DMA and Multi-DMA modes require the DMA driver to be loaded. By setting this parameter to `Auto`, BIOS automatically sets the appropriate DMA mode for your hard disk.

CD-ROM DRIVE DMA MODE

Set this parameter to `Enabled` to enable the DMA mode for the CD-ROM drive. This improves the system performance since it allows direct memory access to the CD-ROM. To deactivate the function, set the parameter to `Disabled` .

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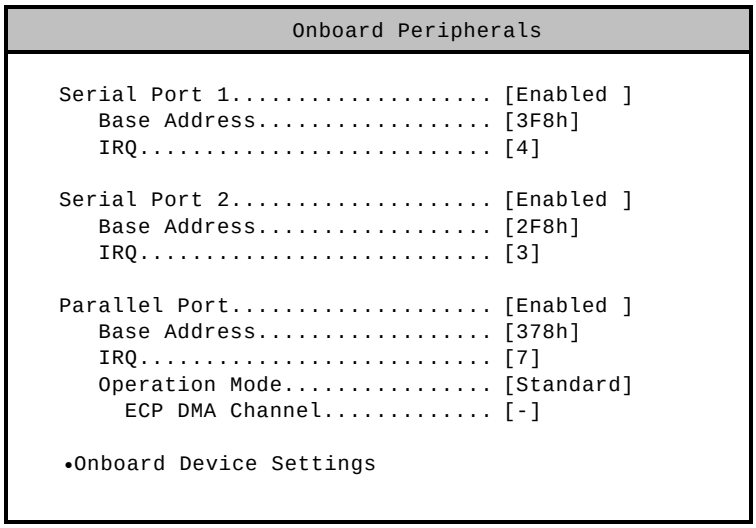
2.5 Onboard Peripherals

The Onboard Peripheral Configuration allows you to configure the onboard communication ports and the onboard devices. Selecting this option displays the following screen:



2.5.1 Serial Ports 1 and 2

These parameters allow you to enable or disable serial ports 1 and 2.

Base Address

This function lets you set a logical base address for serial ports 1 and 2. The options are:

- 3F8h
- 2F8h
- 3E8h
- 2E8h

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IRQ

This function lets you assign an interrupt for serial ports 1 and 2. The options for serial ports 1 are IRQ 4 and 11. The options for serial port 2 are IRQ 3 and 10.

The Base Address and IRQ parameters for each port are configurable only if the port is enabled.

2.5.2 Parallel Port

This parameter allows you to enable or disable the parallel port.

Base Address

This function lets you set a logical base address for the parallel port. The options are:

- 3BCh
- 378h
- 278h

IRQ

This function lets you assign an interrupt for the parallel port. The options are IRQ 5 and 7.

The Base Address and IRQ parameters are configurable only if Parallel Port is enabled.

If you install an add-on card that has a parallel port whose address conflicts with the onboard parallel port, a warning appears on the screen.

Check the parallel port address of the add-on card and change the address to one that does not conflict.

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Operation Mode

This item allows you to set the operation mode of the parallel port. Table 2-1 lists the different operation modes.

Table 2-1 Parallel Port Operation Mode Settings

Setting	Function
Standard Parallel Port (SPP)	Allows normal speed one-way operation
Standard and Bidirectional	Allows normal speed operation in a two-way mode
Enhanced Parallel Port (EPP)	Allows bidirectional parallel port operation at maximum speed
Extended Capabilities Port (ECP)	Allows parallel port to operate in bidirectional mode and at a speed higher than the maximum data transfer rate

ECP DMA CHANNEL

This item becomes active only if you select Extended Capabilities Port (ECP) as the operation mode. It allows you to assign DMA channel 1 or DMA channel 3 for the ECP parallel port function (as required in Windows 95).

2.5.3 Onboard Device Settings

The Onboard Device Settings menu allows you to configure the onboard communication ports and the onboard devices. Selecting this option from the Onboard Peripherals menu displays the following screen:

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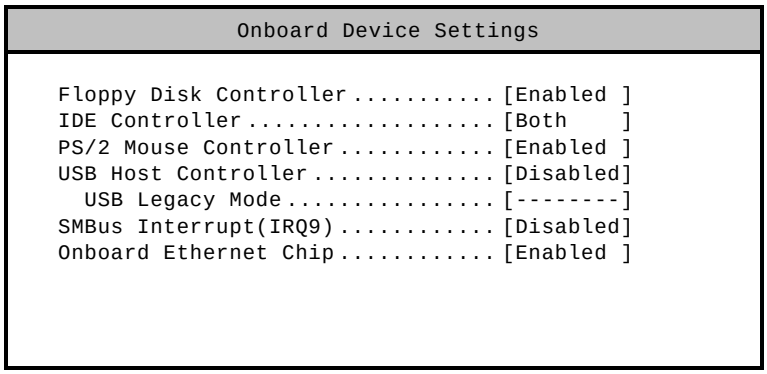
Onboard Device Settings
Floppy Disk Controller ..... [Enabled]
IDE Controller ..... [Both]
PS/2 Mouse Controller ..... [Enabled]
USB Host Controller ..... [Disabled]
USB Legacy Mode ..... [--------]
SMBus Interrupt(IRQ9) ..... [Disabled]
Onboard Ethernet Chip ..... [Enabled]

Floppy Disk Controller

This parameter lets you enable or disable the onboard floppy disk controller.

IDE Controller

Set this parameter to `Primary` to enable only the primary IDE controller; `Both` to enable both primary and secondary IDE controllers; or `Disabled` to disable all IDE controllers.

PS/2 Mouse Controller

This parameter enables or disables the onboard PS/2 mouse controller.

USB Host Controller

This parameter lets you enable or disable the USB controller on board. When enabled, it activates the USB function of the system. When disabled, it deactivates the function.

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USB LEGACY MODE

This function, when enabled, lets you use a USB keyboard in DOS. Set this to `Disabled` to deactivate the USB keyboard function in DOS.

SMBus Interrupt (IRQ9)

The System Management Bus (SMBus) is used for controlling and getting information from devices on a motherboard. It was designed for hybrid devices based on analog semiconductor technologies and with limited digital capabilities. This parameter allows you to enable or disable this feature.

Onboard Ethernet Chip

This parameter allows you to enable or disable the onboard network feature.

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2.6 Power Management

The Power Management menu allows you to configure the system power-management feature.

The following screen shows the Power Management parameters and their default settings:

```
                    Power Management

    Power Management Mode.............[Enabled]
      IDE Hard Disk Standby Timer.....[Off]
      System Sleep Timer..............[Off]
        Sleep Mode....................[----]

    Power Switch < 4 sec. ............[Suspend]

    System Wake-up Event
      Modem Ring Indicator............[Enabled]
```

2.6.1 Power Management Mode

This parameter allows you to reduce power consumption. When this parameter is set to Enabled, you can configure the IDE hard disk and system timers. Setting it to Disabled deactivates the power-management feature and its timers.

IDE Hard Disk Standby Timer

This parameter allows the hard disk to enter standby mode after inactivity of 1 to 15 minutes, depending on your setting. When you access the hard disk again, allow 3 to 5 seconds (depending on the hard disk) for the disk to return to normal speed. Set this parameter to OFF if your hard disk does not support this function.

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System Sleep Timer

This parameter sets the system to the lowest power-saving mode after a specified period of inactivity. Any keyboard or mouse action or any activity detected from the IRQ channels resumes system operation.

SLEEP MODE

This parameter lets you specify the power-saving mode that the system will enter after a specified period of inactivity. The options are Standby and Suspend modes.

This parameter becomes configurable only if the System Sleep Timer is enabled. Any keyboard or mouse action, or any enabled monitored activities occurring through the IRQ channels resume system operation.

2.6.2 Power Switch < 4 sec.

When set to Power Off, the system automatically turns off when the power switch is pressed for less than 4 seconds. When set to Suspend, the system enters the suspend mode when pressed for less than 4 seconds.

2.6.3 System Wake-up Event

The system wake-up event allows the system to resume operation when the modem ring indicator is enabled.

Modem Ring Indicator

When Enabled any fax/modem activity wakes up the system from suspend mode. The default setting is Enabled.

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2.7 Boot Options

This option allows you to specify your preferred setting for bootup.

The following screen appears if you select Boot Options from the Basic Configuration menu:

```
                    Boot Options

   Boot Sequence
     1st [Floppy Disk]
     2nd [Hard Disk  ]
     3rd [IDE CD-ROM ]

   First Hard Disk Drive.............[ IDE]

   Fast Boot.........................[Auto]
   Silent Boot.......................[Enabled]
   Num Lock After Boot...............[Enabled]
   Memory Test.......................[Enabled]
  *Configuration Table...............[Enabled]
   Boot from LanDesk Service Agent....[Disabled]
```

The above parameter marked with '' will only appear if you access the advanced configuration level in the Main Menu. Please refer to section 2.1 for more information.*

2.7.1 Boot Sequence

This parameter allows you to specify the boot search sequence during POST.

- 1st. The system checks this drive first.

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- 2nd. The system then checks this drive if it can not boot from the 1st specified drive.
- 3rd. If the 1st and 2nd searches fail then it boots from this drive.

BIOS will display an error message if the drive(s) specified is not bootable.

2.7.2 First Hard Disk Drive

This parameter specifies whether the BIOS utility will boot from an EIDE hard disk drive or a SCSI hard disk drive. The system will automatically boot from an EIDE hard disk if your system does not have a SCSI hard disk drive. The default setting is IDE.

2.7.3 Fast Boot

This parameter allows the system to boot faster by skipping some POST routines. The default setting is Auto.

2.7.4 Silent Boot

This parameter enables or disables the Silent Boot function. When set to Enabled, BIOS is in graphical mode and displays only an identification logo during POST and while booting. After booting the screen displays the operating system prompt (such as DOS) or logo (such as Windows 95). If any error occurs while booting, the system automatically switches to the text mode.

Even if your setting is Enabled, you may also switch to the text mode while booting by pressing F3 when you see the “Ctrl-Alt-Esc key to enter setup” message on the screen.

When set to Disabled, BIOS is in the conventional text mode where you see the system initialization details on the screen.

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2.7.5 Num Lock After Boot

This parameter allows you to activate the Num Lock function upon booting. The default setting is Enabled.

2.7.6 Memory Test

When set to Enabled, this parameter allows the system to perform a RAM test during the POST routine. When set to Disabled, the system detects only the memory size and bypasses the test routine. The default setting is Enabled.

2.7.7 Configuration Table

This parameter allows you to enable or disable the appearance of the configuration table after POST but before booting. The configuration table gives a summary of the hardware devices and settings that BIOS detected during POST.

2.7.8 Boot from LANDesk Service Agent

When set to Enabled, the system boots from a LANDesk Service Agent network instead of your desktop system. The LANDesk Service Agent is IEEE-standards-based code that intervenes in the boot process. Please refer to your LANDesk Manual for more information.

When set to Disabled, the system boots from the drive specified in the Boot Sequence parameter.

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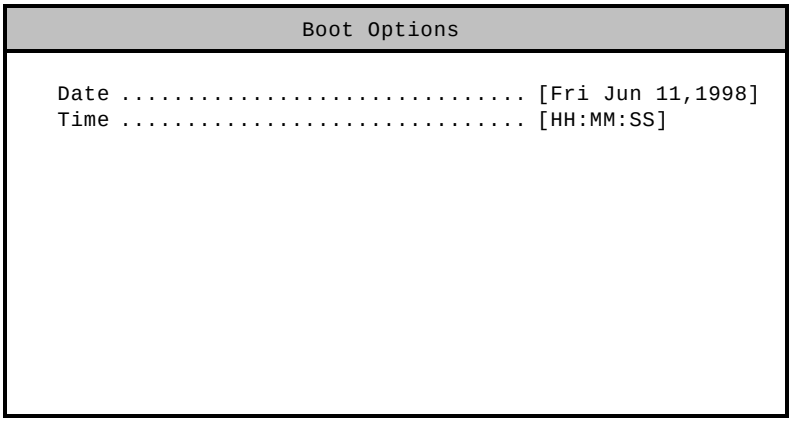
2.8 Date and Time

The real-time clock keeps the system date and time. After setting the date and time, you do not need to enter them every time you turn on the system. As long as the internal battery remains good (approximately seven years) and connected, the clock continues to keep the date and time accurately even when the power is off.



2.8.1 Date

Highlight the items on the Date parameter and press → or ← to set the date following the weekday-month-day-year format.

Valid values for weekday, month, day, and year are:

- Weekday Sun, Mon, Tue, Wed, Thu, Fri, Sat
- Month 1 to 12
- Day 1 to 31
- Year 1980 to 2099

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2.8.2 Time

Highlight the items on the Time parameter and press → or ← to set the time following the hour-minute-second format.

Valid values for hour, minute, and second are:

- Hour 00 to 23
- Minute 00 to 59
- Second 00 to 59

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2.9 Advanced Options

Advanced Option configuration is available only in the Advanced Level.

The Advanced Options configuration menu allows you to configure the system memory, PCI device settings, and CPU frequency.

Do not change any settings in the Advanced Configuration if you are not a qualified technician to avoid damaging the system.

The following screen shows the Advanced Options parameters:

```
Advanced Options

  • Memory/Cache Options
  • PnP/PCI Options
  • CPU Frequency
```

2.9.1 Memory/Cache Options

The Memory/Cache Options allows you to configure the advanced system memory functions.

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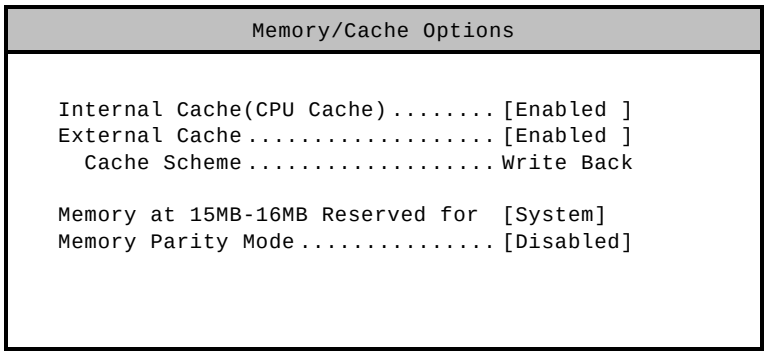
Memory/Cache Options
Internal Cache(CPU Cache) ..... [Enabled]
External Cache ..... [Enabled]
Cache Scheme ..... Write Back
Memory at 15MB-16MB Reserved for [System]
Memory Parity Mode ..... [Disabled]

Internal Cache (CPU Cache)

This parameter enables or disables the first-level or internal memory, that is, the memory integrated into the CPU. The default setting is Enabled.

External Cache

This parameter enables or disables the external cache memory. The external cache is incorporated in the CPU module.

CACHE SCHEME

This parameter shows the cache scheme status only as Write-back mode. Write-back updates the cache but not the memory when there is a write instruction. It updates the memory only when there is an inconsistency between the cache and the memory.

Memory at 15MB-16MB Reserved for

To prevent memory address conflicts between the system and expansion boards, reserve this memory range for the use of either the system or an expansion board.

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Memory Parity Mode

This parameter allows you to enable or disable the ECC (Error Checking and Correction) feature. The ECC feature enables BIOS to detect and correct data errors. Disable this parameter if you want to disregard the function.

2.9.2 PnP/PCI Options

The PnP/PCI Options allows you to specify the settings for your PCI devices. Selecting this option displays the following screen:

For system board with LAN

```
                    PnP/PCI Ooptions

PCI IRQ Setting  ........ [  Auto  ]
                          INTA   INTB   INTC   INTD
   PCI Slot 1............ [--]   [--]   [--]   [--]
   PCI Slot 2............ [--]   [--]   [--]   [--]
   PCI Slot 3............ [--]   [--]   [--]   [--]
   PCI Slot 4............ [--]   [--]   [--]   [--]
   Onboard LAN........... [--]
   AGP................... [--]

PCI IRQ Sharing ...........[No]
VGA Palette Snoop  ........[Disabled]
Graphics Aperture Size ....[64] MB
Plug and Play OS ..........[Yes]
Reset Resource Assignments [No ]
```


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For system board without LAN

```
                    PnP/PCI Ooptions

PCI IRQ Setting .........[  Auto  ]
                         INTA   INTB   INTC   INTD
   PCI Slot 1 ............[--]   [--]   [--]   [--]
   PCI Slot 2 ............[--]   [--]   [--]   [--]
   PCI Slot 3 ............[--]   [--]   [--]   [--]
   PCI Slot 4 ............[--]   [--]   [--]   [--]
   PCI Slot 5 ............[--]   [--]   [--]   [--]
   AGP ...................[--]

PCI IRQ Sharing........... [No]
VGA Palette Snoop  ........ [Disabled]
Graphics Aperture Size.... [64] MB
Plug and Play OS.......... [Yes]
Reset Resource Assignments [No ]
```

PCI IRQ Setting

Select Auto to let BIOS automatically configure the plug-and-play (PnP) devices installed on your system. Otherwise, select Manual.

Refer to your manual for technical information about the PCI card.

PCI SLOTS

When you set the PCI IRQ Setting parameter to Auto, these parameters specify the auto-assigned interrupt for each of the PCI devices. If you set the PCI IRQ Setting parameter to Manual, you need to specify the interrupt that you want to assign for each PCI device installed in your system.

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ONBOARD LAN

When you set the PCI IRQ Setting parameter to Auto, this parameter specifies the auto-assigned interrupt for the onboard LAN. If you set the PCI IRQ Setting parameter to Manual, you need to specify the interrupt that you want to assign for the onboard LAN installed in your system.

AGP

This item shows the assigned interrupt for the onboard accelerated graphics port (AGP) controller.

PCI IRQ Sharing

Setting this parameter to Yes allows you to assign the same IRQ to two different devices. To disable the feature, select No.

If there are no IRQs available to assign for the remaining device function, we recommend that you enable this parameter.

VGA Palette Snoop

This parameter permits you to use the palette snooping feature if you installed more than one VGA card in the system.

The VGA palette snoop function allows the control palette register (CPR) to manage and update the VGA RAM DAC (Digital Analog Converter, a color data storage) of each VGA card installed in the system. The snooping process lets the CPR send a signal to all the VGA cards so that they can update their individual RAM DACs. The signal goes through the cards continuously until all RAM DAC data has been updated. This allows the display of multiple images on the screen.

Some VGA cards have required settings for this feature. Check your VGA card manual before

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setting this parameter.

Graphics Aperture Size

This parameter determines the effective size of the graphics aperture. Graphics aperture is the address range that the AGP video and the CPU use to manage graphical objects. The lowest setting is 8 MB and the highest is 256 MB.

Plug and Play OS

When this parameter is set to Yes, BIOS initializes only PnP boot devices such as SCSI cards. When set to No, BIOS initializes all PnP boot and non-boot devices such as sound cards.

Set this parameter to Yes *only if your operating system is Windows 95.*

Reset Resource Assignments

Set this parameter to Yes to avoid IRQ conflict when installing non-PnP or PnP ISA cards. This clears all resource assignments and allows BIOS to reassign resources to all installed PnP devices the next time the system boots. After clearing the resource data, the parameter resets to No.

2.9.3 CPU Frequency

This parameter displays your CPU's speed and bus frequency. It also allows you to specify the voltage setting for your current CPU. Selecting this option displays the following screen:

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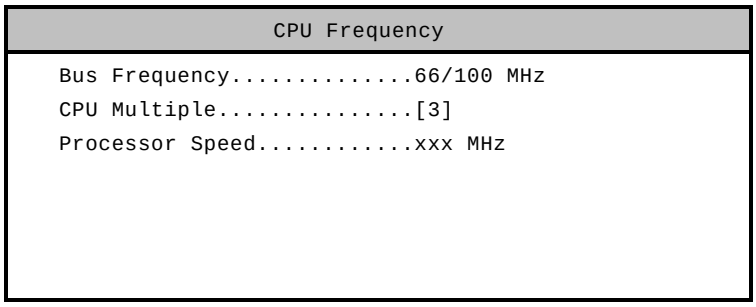

Bus Frequency

The bus frequency refers to the speed by which data is transferred between internal computer components and the CPU or the main memory of the CPU. A fast bus allows data to be transferred faster, which makes applications run faster.

CPU Multiple

This parameter sets the Core/bus ratio of your system. The clock speed of the bus does not necessarily equal the CPU's (core). The bus clock speed is often slower than the CPU clock speed.

Processor Speed

The processor speed is the speed at which a microprocessor executes instructions. Clock speeds are expressed in megahertz (MHz), with 1 MHz being equal to 1 million cycles per second. The faster the clock, the more instructions the CPU can execute per second.

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2.10 System Security

The Setup program has a number of security features to prevent unauthorized access to the system and its data.

The following screen appears if you select System Security from the Main menu:

```
                    System Security

  Setup Password ..............[None]
  Power-on Password ...........[None]
    Operation Mode ............[Normal]

  Disk Drive Control
    Floppy Drive ..............[Normal]
    Hard Disk Drive ...........[Normal]
```

2.10.1 Setup Password

The Setup Password prevents unauthorized access to the BIOS utility.

To set or change a Password:

1. Make sure that JP3 is set to 2-3 (bypass password). See figure 1-2 for the location of JP3.

You cannot enter the BIOS utility if a Setup password does not exist and JP3 is set to 1-2 (password check enabled).

By default, JP3 is set to 2-3 (Bypass password).

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2. Enable the Setup Password parameter in the System Security menu by pressing the ← or → arrow key. The Setup Password window appears:

```
Setup Password

Enter your new Setup Password twice.  Setup Password
may be up to 7 characters long.

Enter Password ..............  [xxxxxxx]
Enter Password again ........  [xxxxxxx]

Set or Change Password
```

3. Type a password in the Enter Password field. The password may consist of up to seven characters.

Be very careful when typing your password because the characters do not appear on the screen.

4. Press ENTER. Retype your password in the Enter Password again field to verify your first entry.

5. Highlight Set or Change Password and press ENTER.

6. Press ESC to return to the System Security menu and then press ESC again to exit Setup. The Exit Setup screen appears:

```
Exit Setup

Settings have been changed.
Do you want to save to CMOS settings?
      [Yes]      [No]
```


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7. Press Yes to save your settings and exit the Setup Utility. Your password will be saved to CMOS.

For the password to take effect you must set jumper JP3 to 1-2 (Check password):

1. Turn off and unplug the computer.

2. Open the computer housing and set JP3 to 1-2 (Check password) to check the password function. See figure 1-2 for the location of JP3.

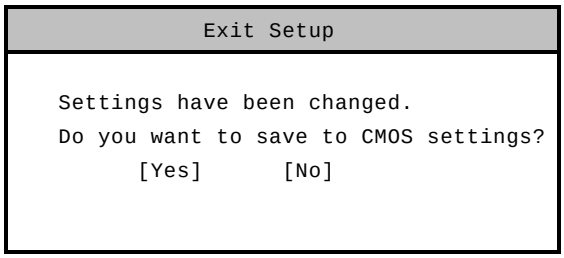
3. Close your computer's housing and reboot your system.

The next time you want to enter the BIOS utility, you must key in your Setup password.

To remove your Setup Password:

1. Disable the Setup Password parameter in the System Security menu by pressing the ← or → arrow key to select None.

2. Press ESC to return to the System Security menu and then press ESC again to exit Setup. The Exit Setup screen appears:



3. Press Yes to save your settings and exit Setup Utility. Your previous password will be removed from CMOS.

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Remember to set JP3 to 2-3 (Bypass password) because you won't be able to access Setup Utility if a password does not exist and JP3 is set to 1-2 (Check password).

To set JP3 to 2-3 (Bypass password):

1. Turn off and unplug the computer.
2. Open the computer housing and set JP3 to 2-3 (Bypass password) to bypass the password function. See figure 1-2 for the location of JP3.
3. Close your computer's housing and reboot your system.

To bypass Setup Password:

If you forget your setup password, you can bypass the password security feature by hardware. Follow these steps to bypass the password:

1. Turn off and unplug the computer.
2. Open the computer housing and set JP3 to 2-3 (Bypass password) to bypass the password function. See figure 1-2 for the location of JP3.
3. Turn on the system and enter the BIOS utility. This time, the system does not require you to type in a password.

You can either change the existing Setup password or remove it by selecting None. *Refer to the previous section for the procedure.*

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2.10.2 Power-on Password

The Power-on Password secures your system against unauthorized use. Once you set this password, you have to type it whenever you boot the system. To set this password, enter the Setup Utility, select System Security, and then highlight the Power-on Password parameter. Follow the same procedure as in setting the Setup password.

Make sure to set JP3 to 1-2 to enable the Power-on password.

```
                    Power-on Password

  Enter your new Power-on Password twice.  Power-on
  Password may be up to 7 characters long.

  Enter Password ..............[       ]
  Enter Password again .........[       ]

  Set or Change Password
```

Operation Mode

This function lets you enable or disable the password prompt display. When set to `Normal`, the password prompt appears before system boot. When set to `Keyboard Lock`, the password prompt does not appear; however, your system will not respond to any keyboard or mouse input until you enter the correct password.

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2.10.3 Disk Drive Control

The disk drive control features allow you to control the floppy drive or the hard disk drive boot function to prevent loading operating systems or other programs from a certain drive while the other drives are operational (under DOS mode only).

Table 2-2 lists the drive control settings and their corresponding functions.

Table 2-2 Drive Control Settings

Floppy Drive	
Setting	**Description**
Normal	Floppy drive functions normally
Write Protect All Sectors	Disables the write function on all sectors
Write Protect Boot Sector	Disables the write function only on the boot sector
Hard Disk Drive	
Setting	**Description**
Normal	Hard disk drive functions normally
Write Protect All Sectors	Disables the write function on all sectors
Write Protect Boot Sector	Disables the write function only on the boot sector

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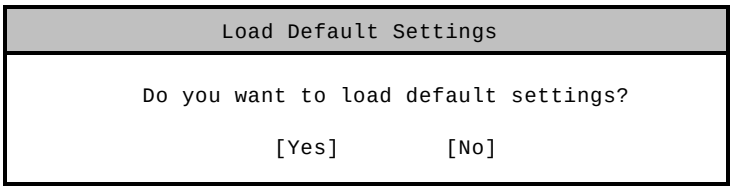
2.11 Load Default Settings

Use this option to load the default settings for the optimized system configuration. When you load the default settings, some of the parameters are grayed-out with their fixed settings. These grayed parameters are not user-configurable.

The following dialog box appears when you select Load Default Settings from the main menu:



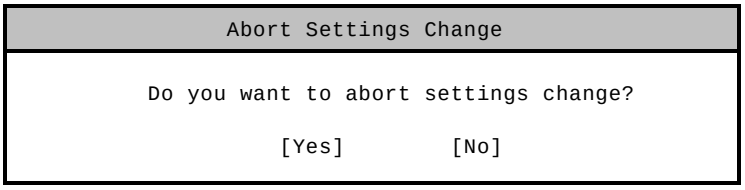
Select Yes to load the default settings.

Select No to ignore the message and return to the BIOS utility.

2.12 Abort Settings Change

Use this option to disregard your changes to the BIOS and reload your previous settings.

The following dialog box appears when you select Abort Settings Change from the main menu:



Select Yes to disregard your changes and reload your previous settings. After reload, the main menu appears on screen.

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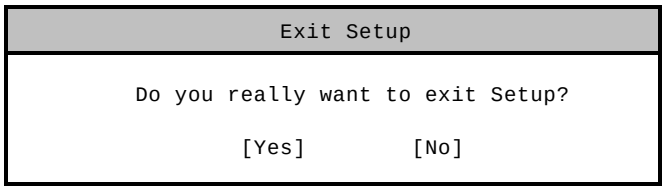
Select No to ignore the message and return to the BIOS utility.

2.13 Exit Setup

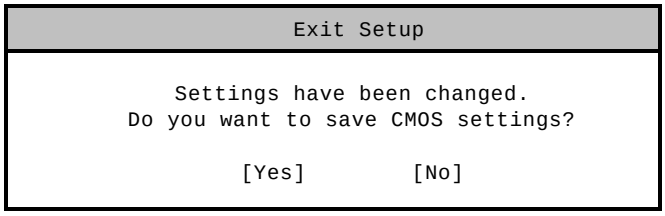
Examine the system configuration values. When you are satisfied that all the values are correct, write them down. Store the recorded values in a safe place. In the future, if the battery loses power or the CMOS chip is damaged, you will know what values to enter when you rerun Setup.

Press ESC to leave Setup Utility. The following dialog box appears:



Use the arrow keys to select your response. Press ENTER.

If you made any changes to the Setup Utility, the dialog box below is displayed.



Use the arrow keys to select your response. Select Yes to save the changes in CMOS. Select No to retain the old configuration values. Press ENTER to exit.

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